U.S. Marine Corps Radio Frequency Identification (RFID) Manual and Tag Placement Guide

PURPOSE

This manual identifies media described as Automatic Identification Technology (AIT), but focuses on Radio Frequency Identification (RFID) applications and the mandated use of RF tags in unit movement, ammunition, retrograde, and sustainment operations. RFID provides visibility to improve control and management of assets in process, in-storage, and in-transit. RFID enables the collection, integration, and dissemination of content level detail (also referred to as Level 6 in the JOPES world) information to all who require it. It will provide the user with instructions on writing data to an RFID tag, how to properly register an interrogator, definition of content level detail, responsibilities for sending and checking RFID tag data in the intransit visibility (ITV) server, as well as providing a guideline for attaching RFID tags to items.

BACKGROUND

What is AIT? AIT is a suite of technologies that enhances that improves logistics business processes and enhances warfighting capabilities through the automated collection of initial source data; improves data accuracy in an automated information system; and enables the automatic capture of source data, enhances the ability to identify, track, document and control deploying and redeploying forces, equipment, personnel, retrograde, and sustainment cargo. The Automated Information System (AIS) then interfaces its information with DOD national systems (i.e. Joint Total Asset Visibility (JTAV), Global Transportation Network (GTN), ITV server) to identify unit movements, equipment and sustainment supplies moving from origin to destination. The consolidated picture of all systems reporting to one location would lead to the ultimate goal, Total Asset Visibility (TAV).

AIT tools are essential to ITV and provide the users the capability to see shipments of in-transit, location history and the contents of each shipment. AIT media includes: Contact Memory Buttons (CMB), Linear Barcode, PDF 417 2 Dimensional Barcode (2DBC), and Satellite Tracking.

During FY03/04, DOD issued several policy letters identifying the Department's support and guidance in using RFID. The last policy letter, data 30 July 2004, mandates the use of RFID on all Principal End Items (PEIs), MILVANS (Containers), and 463L Pallets going OCONUS for Unit Move, Sustainment, Ammunition, Retrograde, and Redeployment. Deputy Commandant, Installation and Logistics, Headquarters Marine Corps identified the primary office for TAV/ITV/AIT as Logistics Vision and Strategy Center (LPV-1). Additional guidance has been published, including a Marine Corps Order and an AIT CONOPS and Implementation Plan that provides additional guidance on the implementation and use of AIT, specifically RFID.

AIT VISION

The USMC vision is to integrate existing and new technologies into standard AISs and use these technologies to support future logistics operations.

INTRANSIT VISIBILITY

A subset of TAV is ITV. ITV is the fusion of logistics information and distribution technologies for rapid crisis response, deployment, redeployment, and sustainment. It provides decision makers at all levels of command and throughout the logistics pipeline with accurate, near real-time data to collaboratively plan, prioritize, and redirect logistics operations.

ITV provides the capability to track and re-direct units, equipment, and supplies that are enroute. It uses AIT to provide a fully synchronized means to collect and access continuous near real-time information on the location, movement status, and identity of units, personnel, equipment, and supplies, as well as the ability to act on that information.

ITV depends on AIT devices that include bar codes for individual items, optical memory cards for multi-packs and containers, radio frequency tags for containers and pallets, and a movement tracking capability using satellite links for convoys, trains, and barges. ITV information can be used by commanders to "track" the location of units, personnel, and equipment during deployment, redeployment, retrograde, and sustainment operations.

For deployment/redeployment of unit equipment, the MAGTF Deployment Support System (MDSS II) is the AIS used to create the electronic manifest needed to write to the RF tag. For deployment/redeployment/retrograde of sustainment items (class IX), Automated Manifest System – Tactical (AMS-TAC) is the current AIS used to create the electronic manifest and write data to the RFID tag.

The DoD time criteria for users to input and view ITV information, after transmission from an AIS source to the Global Transportation Network (GTN), are:

- 1 hour for shipments of unit and non-unit equipment,
- 1 hour for air shipments,
- 4 hours for ocean surface shipments, and
- 2 hours for intra-theater shipments.

RFID

This section provides a more in-depth description into the various categories of RFID. In general, RFID spans the length of the Department of Defense (DOD) distribution chain to include:

- Receipt – Includes automatic update of inventory and valuation.
- Storage/Issue – Includes inventory management.
- Transportation – Includes movement and consolidation for trans-shipment.
- Maintenance – Includes movement tracking and assembly/disassembly.
- Disposal – Includes hazardous material tracking.

RFID EQUIPMENT

RFID TAG

Description – An RF tag is an omni-directional data collection and storage device. It is similar to a floppy disk except it has a stand-off read/write capability. RF tags are normally in an energy conserving "sleep" mode. The tag "wakes-up" when it receives a signal from an Interrogator. This "wake-up" functionality helps conserve battery life. Each RF tag has its own identification number (e.g. 27081). When an Interrogator "collects" tag information, it only collects this identification number.

The standard RFID tag for the Marine Corps is the SAVI 410 active tag. This RFID tag has 128K of read/write memory and operates with a 3.6V battery (although looking like a AA battery, it is twice the power and cannot be used in CD players) on a frequency of 433.92 Mhz. It is used on all principal end items (PEI), SEAVANs, MILVANS, Quadcons, engine/blade containers, wooden pallets, and 463L air pallets. The NSN for this tag is 6350-01-495-3040 and can be ordered through the Inventory Control Point (ICP) Defense Supply Center Philadelphia (ICP RIC – S9I).

The SAVI 410 tag is currently written by AMS-TAC and MDSS II version. 7.1. No other Marine Corps AIS has imbedded the capability of writing information to the RFID tag; however, with the use of government off the shelf (GOTS) software, it is possible to associate a system called TIPS or CATT to an existing Marine Corps AIS to assist in writing RFID tags.

The next generation active RFID tag is the ST-654. This tag has the same capabilities of the existing 410 RFID tag, but is only 6.25" x 2.125"x 1.125". This tag will be used in the same manner as the existing 410 tag described above. The NSN for this tag is 6350-01-523-1998. The battery used in this tag is not compatible with the 410 tags – it is product number BAT-1125, CLIN X009CB.

Range - RF tags have an RF range of 300 feet (unobstructed) and line-of-site is not required for RF interrogation.

"Beep" function - A fixed or Hand Held Interrogator can activate the RF tag's audible "beeper." Once activated, the beeper emits an audible "beep" for about two minutes to help a user pinpoint a tag's location.

Power source - RF tags are battery-powered. The frequencies of data collections affect the RF tag's battery life. For example, if an interrogator, set in a continuous collection mode, has a tagged container parked or stored within its range; the constant, long-term interrogation will

quickly drain RF tag batteries. Likewise, continuously reading entire tag's content, versus only the RF tag's identification number data, will drain the batteries. Typical battery life is five years with 2 collections per day.

RFID Tag Batteries

The batteries in the SAVI 410 tag are advertised to last somewhere between 3-5 years, depending on the number of times the tag is interrogated – the more interrogations, the less battery life. DO NOT use this battery in any other equipment that operates with a AA battery! A commercial AA battery is approximately 1.7 volts; an RFID tag battery is 3.6 Volts. Regular commercial devices can't handle the power! This is a 3.6 Volt AA sealed, Non-Rechargeable Lithium Battery, NSN: 6135-01-301-8776, Defense Supply Center Richmond, ICP RIC S9G.

The SAVI 410 RF tag battery is accessible by sliding the battery access door at the bottom of the RFID tag downward. This is also the "on/off" switch for the tag.

The battery for the new model 654 tag is a completely different battery and cannot use the Savi 410 RFID tag battery. The 654 battery can be ordered through the RFID II contract, with product number BAT-1125 and CLIN # X009CB.

Cable Ties. RFID tags must be attached to the item using a two-point attachment. The tag has a hole at the top and the bottom of the RFID tag for that use. Any unit using cable ties to attach a SAVI 410 RFID tag to an item cannot use the mounting bracket that comes with the 410 tags. Any unit attaching a SAVI 654 tag to an item must attach the tag to the item with the mounting bracket using cable ties (the holes are larger and the cable tie will fit in both holes). Units will use nylon or plastic cable ties of at least 50lb tinsel strength to attach the tag. Recommended NSN is 5975-00-899-4606.

RFID INTERROGATOR

Description - The interrogator is a water resistant plastic saucer shaped dish approximately 12" wide by 7" high, and powered by 110/220V or 6-16 VDC (optional solar power unit available). It can be permanently attached to a structure (building, pole, etc) or can be attached to a tripod or even on a vehicle. The interrogator is omni-directional and can be used to read and/or write RFID tags. It can be used at a choke point (road intersection, port gate, flight line inspection area) or as a yard manager (container lot, vehicle storage area, etc.). Interrogators can be linked using different interfaces: RS-232, RS-485, RF link both in a garrison or field environment, if the area to be monitored is larger than the coverage of one unit.

RFID Tag Read Process

The tag enters an area around the interrogator and the interrogator wakes the tag. The tag then communicates with the interrogator by sending its RFID tag number (the number that is printed on the top of the SAVI RFID tag. Upon receipt of a signal from the RF tag, the interrogator instructs the tag back to "sleep" and then either temporarily stores the tag data or passes the data to a communications device which in-turn transmits the data to the Regional ITV (RITV) Server. During the communication with the server, the interrogator passes the interrogator number, tag number(s) read since the last upload, date/time of each tag read – it does not pass all the content level data that was written to the tag; that data should have been transmitted to the ITV server after the tag write process. Since the interrogator has already been registered with the server, the server knows the location of the interrogator.

Range – An interrogator has an omni-directional range of 300 ft. (unobstructed). Generally, the higher the installation (up to 30 feet), the greater the range. The interrogators can be networked in a structured area to provide coverage of nearly unlimited area. Obstructions such as metal walls, chained in areas or items stacked in multiple layers could seriously weaken RF transmission(s). Interference from RF emitting devices close to the RFID equipment such as PCs, walkie-talkies, cellular phones, elevators, electrical motors or any other RF emitting device can interfere with communications.

Settings - Interrogators can be set to collect tag data in either a continuous or intermittent mode. The continuous tag data collection mode will cause a drain on RF tag battery life, if policy is not followed.

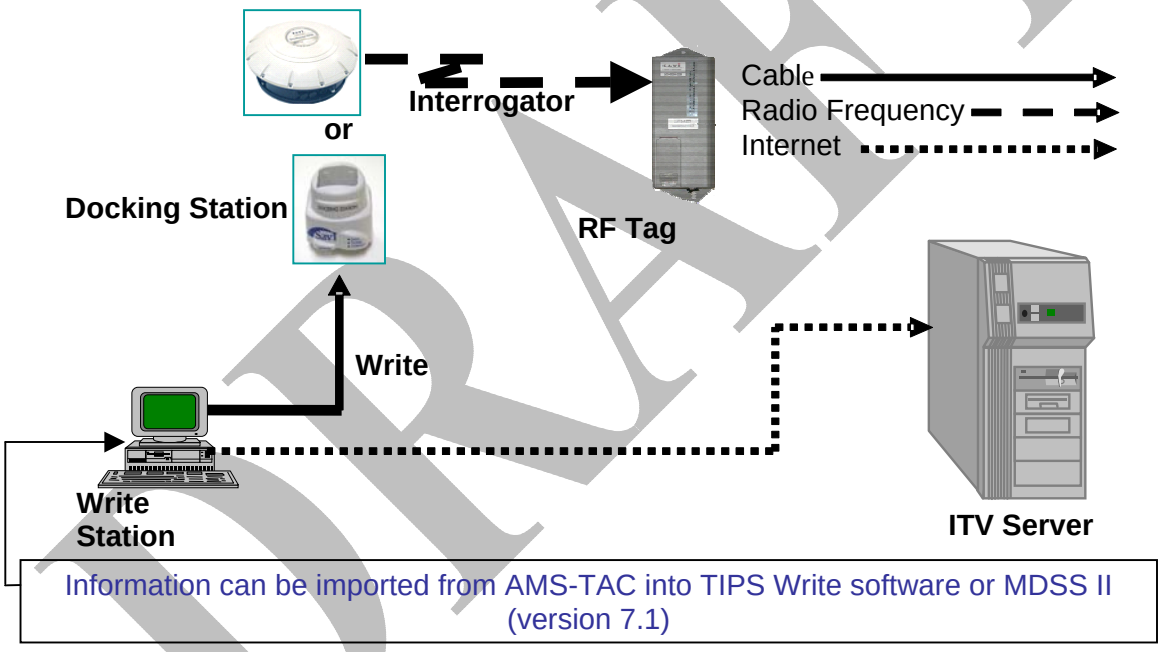
RFID TAG DOCKING STATION

Description - The RFID tag docking station is used to read/write data to an RFID tag, one tag at a time. The transfer of information rate is 38,400 BPS using an RS232 9 pin connector to the laptop/desktop. The pictured docking station can only be used with the Savi 410 RFID tag; however, an adapter has been developed (docking station sleeve adapter is CLIN X001CB, model # SDSA-654-01) that fits into the docking station and enables the 654 tag to be written.

Tag docking stations write data directly into the memory of RF Tags, cutting the time required to initiate a new tag or update an existing one. The docking station connects directly to the RF tag through a four-pin connector in the sliding dock and connects to a computer through a standard RS-232 cable.

The Marine Corps presently uses the RFID Tag Docking Station with Automated Manifest System –Tactical (AMS-TAC). The MAGTF LOGAIS 7.1 system currently writes data to the RFID tag using the interrogator, not the docking station.

RF Tag Write Process



1. The RFID tag is made up of four principal areas – license plate, commodity, Transportation Commodity Management Document (TCMD), and tracking history.
   - License plate data includes the Transportation Control Number (TCN), Container number (made up of an 11 digit alphanumeric number), port of embarkation, port of debarkation, consignee DODAAC (shipper), consignor (receiver), transportation priority, and hazardous material code. This information should be derived from the UDL and should be automatically imported from the AIS.
   - Commodity data is where the content level data describing the item is located. The ultimate definition of content level data is published in OSD RFID Policy of 30 June 2004 and in the latest version of the Defense Transportation Regulation (DTR). Data elements for commodity data do not include all data elements identified in the definition of content level detail, but the important ones for the RFID tag include: Document number, NSN, Package ID (PKGID), Intermediate TCN, Nomenclature, Quantity, Unit of Issue, RIC, Department of Defense Identification Code (DODIC), United Nations Identification Code (UNID), hazardous material code, serial number.

- Transportation Control and Management Document (TCMD). This data refers to the 80 column transportation data necessary to exchange data between AISs.
- Tracking History identifies the RFID tag history, starting with the tag write and includes the docking station/interrogator that wrote the data to the tag with the time/date, and then each interrogator read of the tag, with the time, date, and location of the last read.

2. Prior to writing information to an RFID tag, several steps are required:
   - Determine if the battery is installed. To check the battery, open the battery compartment of the tag (slide the battery compartment on the SAVI 410 tag; open the compartment by turning it on the SAVI 654 tag).
   - If the battery is present, check it by removing the positive end and reinserting – you should hear a beep if active). If there is no battery installed, correctly install a new battery.
   - If the battery is installed whereby the battery is turned so that the + terminal of the battery is upside down (inverted) and is inserted over the – end of the tag, the tag is considered deactivated and will not respond when interrogated nor enable any data to be written to it.
   - The tag should be placed in the docking station and the data on the tag erased. This will free up space on the tag so that none of the data written is corrupted or left off. This can be accomplished by going to the write command for the tag and following instructions.

3. RFID tags will be placed on all principal end items (PEIs), SEAVANs, MILVANs, Quadcons, PALCONS, and pallets during any CONUS and/or OCONUS deployment, redeployment, employment, and retrograde process.

4. The first step in the process of writing an RFID tag is to register the interrogator or docking station on the ITV server. This is a crucial step and must be exact, otherwise the interrogator will not be easily found on the server. Refer to Appendix B of this document for step by step instructions on how to register an interrogator or docking station.

5. The next step in the process begins when the AIS (MDSS II, AMS-TAC) has identified the principle end items and the loaded SEAVANS (containers) and pallets. This information is derived from the Unit Deployment List (UDL) or AMS-TAC export. Accuracy of AIS data is imperative to ensure RFID tag data accuracy. Users must ensure all data elements are correctly filled in or the data will not be available for review.

   - The user must identify accurately which tag is associated with a piece of equipment, as all tags look alike. One-way is to print a minimum of three (3) Military Shipping Labels (MSL) for each item of equipment. One MSL is placed around the upper area of the SAVI 410 tag, above the tag number, but not covering it; similar placement can be made on the SAVI 654 tag. The other two MSLs are placed on the item of equipment in accordance with standing embarkation instructions. **The LOGMAR label is no longer authorized for use as the "shipping label"**.

   - The data is then forwarded to the RFID write process. The user has two methods to write tags – a docking station or an interrogator. The docking station writes one tag at a time; the interrogator can collect all RFID tags in the area (both of these pieces of equipment is described in this document) – the user then needs to associate the data to

an RFID tag. Depending on the process selected, the docking station requires the user to insert/remove an RFID tag individually; the interrogator can write data to tags identified within 300 feet of the interrogator. If using the interrogator, care must be taken with identifying and writing data so as not to overwrite data previously written for another item.

6. The last step in writing RFID tags is the requirement for the user to upload RFID tag data after the write process to the ITV server. At a minimum, the RFID tag will contain content level detail as follows: Lead Transportation Control Number (TCN), Vehicle Number, Port of Embarkation (POE), Port of Debarkation (POD), Consignee, Consignor, HAZMAT Code, Transportation Priority (TP), Document Number (DOC), TCN, National Stock Number (NSN), Nomenclature (NOMEN), Package ID (PKGID), Quantity (QTY), and Unit of Issue. The user must ensure, by reviewing the RFID tag data in the server, that the RFID data transferred correctly.

7. Units will ensure the RFID tag is properly attached to the correct piece of equipment and attached in the right locations (see appendix A).

TAG DEACTIVATION. Once at the destination, depending upon local guidance, you may be directed to remove the tags from the vehicle or container and invert the battery to deactivate the tags. Follow local procedures set forth for redistribution.

TAG ERASURE. To remove the data from the tag you must use the write program. You may use either an RF Interrogator or tag docking station to erase data from the tag. After the tag is rewritten, the previous data associated with that tag on the ITV Server will be moved to the archived section of the server.

TAG RETURN POLICY. RFID tags are to be written for all deployment, redeployment, retrograde, and return of sustainment and unit move cargo. RFID tags that deploy on principal end items and containers must remain with the owning unit so that they can be utilized during redeployment. The tag batteries should be inverted and the tags stored. Tags that are excess to a units' requirements will be reported to higher headquarters for redistribution instructions.

EARLY ENTRY DEPLOYMENT SUPPORT KIT (EEDSK)

Description - The EEDSK provides RFID capability for the deploying units at remote or temporary sites when a permanent installation of an RFID interrogator is not required or capable. The EEDSK is perfect for a temporary choke point. It provides:

- Writing of tags
- Reading of tags
- Uploading of tag data
- Access to the regional ITV server
- Printing MSL Labels

The EEDSK can be set up anywhere that interrogation is temporarily needed. It uses satellite communication to communicate with the RFITV servers. It can be powered by the auxiliary power supply from a vehicle, generator or solar panel.

Hand Held Interrogators (HHI)

Description - Hand Held Interrogators (HHI) are portable, rechargeable, battery-powered units that have all the functionality of the fixed interrogator, using the frequency of 433.92, with a nominal omni-directional range of 200 feet. They provide infrared wakeup of RF Tags, so an HHI can establish radio communication with a specific RF Tag without requiring the operator to know the RF tag's identification number. The HHI has memory to store the data it collects. You can also check the tag battery status with this handheld scanner.

"Beeper" function - The beeper on/off function activates or deactivates a tag's beeper. The beeper remains activated for two minutes and can help pinpoint a specific tag's location.

Battery - The battery is a rechargeable, 6V NiCad battery that requires a full 14 hours to charge via the "trickle" charger included with the HHI. The HHI Fast Charger and Cradle and can fully charge the battery in 1 hour.

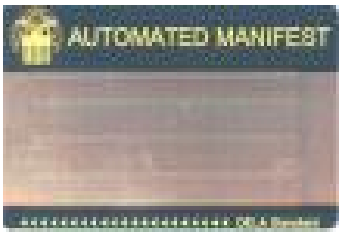
The PDT 8146 Pocket PC uses the Symbol lithium-ion battery pack (P/N 21-52319-01). This battery is rechargeable. When the low battery state is reached, the battery should be taken out of the HHI, completely discharged and then recharged. A complete charge session usually takes between 2 and 2 ½ hours.

Automated Manifest System – Tactical (AMS-TAC)

Description - The Automated Manifest System (AMS) combines a user-friendly software package and state-of-the art hardware into an efficient, cost effective and compact shipping manifest and database management system. AMS automates standard DoD transportation and supply functions such as break bulk, receiving, issue, freight consolidation, redeployment and retrograde operations. The tactical version utilizes the following hardware components: IBM compatible personal computers, OMCs, OMC reader/writers, bar code readers (BCR), RF tags and laser printers. These components can be configured in a desktop version or as a rapid deployable unit (RDU).

Features - AMS establishes material ITV/TAV by writing data to RF tags, OMC cards (DoD format) and transfers the RF tag data to the ITV server. It also provides supply and transportation functions by printing a bar coded DD-1348 (Issue/Receipt Document) and DD-1387 (Military Shipping Label). AMS also prints a DD-1384 (Transportation Control and Movements Document (TCMD)) and packing lists for the multi-packs.

Optical Memory Card



The OMC (pictured above) uses the same technology employed in compact disks and CD-ROM products. Data is etched to the card with a high-intensity laser creating a series of pits in the card. A low-power light beam is used to read the pits on the card and collect the data. Data on an optical memory card may be written in a sequential order on many occasions until all available memory has been used. Data on the card cannot be over-written. As changes occur, updates are added to the card until all memory is filled. Since the OMC has a very large data capacity (2.4 megabytes), it can be used many times.

RFID Tag Management

MARFORs, MEFs, and units will maintain quantities of RFID tags procured and/or received on shipments. Shipments include deployed/redeployed/retrograded equipment, as well as sustainment shipments received from DLA or other Marine Corps activities. While the Marine Corps is procuring RFID tags, no RFID tags will be forwarded outside the Marine Corps. Units feeling they have excess tags should report to higher headquarters for disposition instructions, but returning tags to DLA or throwing tags away is forbidden. Tag reports from the MARFORs will help ensure sufficient quantities of RFID tags are available for use throughout the Marine Corps.

RF TAG, MSL PLACEMENT AND DOCUMENTATION

1. Commander's Responsibilities. Commanders will ensure all vehicles and containers are documented and marked with the following information:
- Shipping Documents
- Destination Placard
- Radio Frequency Identification Tag (RFID Tag). Use nylon or plastic cable ties of at least 50lb tinsel strength to attach the tag. Recommend NSN: 5975-00-899-4606. When attaching RFID tags on other equipment, mount the tag so that it can easily be read but not damaged. Verify the battery life of RFID tags. If the battery power is low, replace the batteries.
- HAZMAT Placards (if required)
- Military Shipping Labels (MSLs) **(LOGMAR label no longer authorized)**
- Do not drill holes in equipment without prior written approval or direction from the owners – this includes SEAVAN containers and PEIs.

2. Marking Containers**.** Containers will be marked with **two** Military Shipping Labels (MSLs) (one on the door and one on the right side of the container as you are looking at the doors) and **one** MSL on the Radio Frequency Identification (RFID) Tag (not across the battery compartment

or the tag number). RFID Tags will be placed on the left door of the container near the ground in a manner that they will not be knocked off or damaged during shipment (see Appendix A). When attaching RFID tags to containers:

- Mount the tag on the door of the container, near the bottom (easier to read a tag number when placed on a trailer or rail car, or when the containers are stacked 2 or 3 high).
- Mount the RFID tag between the ribs in an indentation (where possible) and attach to the locking bar.

3. Marking Vehicles**.** Units will mark vehicles with two MSLs (one on the left front bumper (driver's side) and one on the left side door (driver's door)) and one on the RFID Tag. RFID Tags will be secured to the front of the vehicle per the diagrams in this document.

- When attaching RFID tags to vehicles:
  - Attach the tag as identified in appendix A of this document.

4. Marking 463L Pallets. Attach RFID tags on 463L pallet netting near the MSL.

Military Shipping Labels (MSLs)

The LOGMAR label is no longer authorized for use as the deployment label. Here are the guidelines to follow when working with, and attaching MSLs to unit equipment:

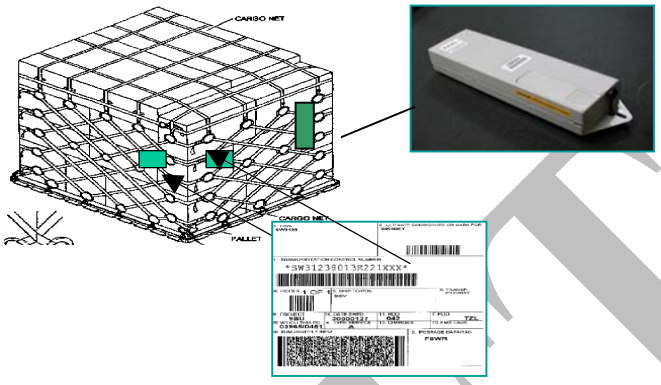
1) Preferred method. Units will not use the LOGMAR label as the shipping label – units must print 2d MSLs on Mylar label stock as they are more resistant to damage by the weather.

2) Units will ensure all required data fields are filled out correctly before printing the labels.

3) Ensure the correct MSLs are attached to the proper piece of equipment in such a manner to reasonably ensure they will not be lost or destroyed during transit.

4) After attaching the MSLs, visually check to ensure they are properly attached and were not damaged during placement on the equipment.

- Whenever possible, labels will be mounted between 2.5 feet to 6 feet off the ground on vehicles. On containers or ISU 90s place the MSL low on the container (approx 1 foot off the ground). Once it is uploaded on a trailer, it will be between 4 and 7 feet off the ground. Units will ensure the labels can be easily found by individuals that need to scan the data at the various transit locations.
- Never attach the label to a part of the equipment that may be removed and packed separately during the movement. (For example, do not attach an MSL to the driver's door of a soft-top high mobility multipurpose-wheeled vehicle (HMMWV) if the door can be removed and packed before loading strategic transportation.)

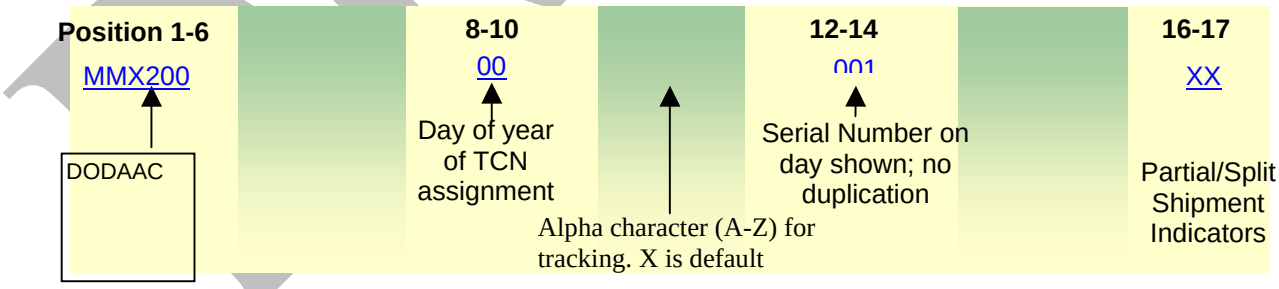


- Containers, 463L pallets, and other multi-packs. Units will place MSLs on one end and on a side at the same end of the multi-pack or pallet.
- If the pallet will be wrapped and protected by plastic, place the MSL on the outside of the plastic.
- Do not mark on the bar code for any reason.

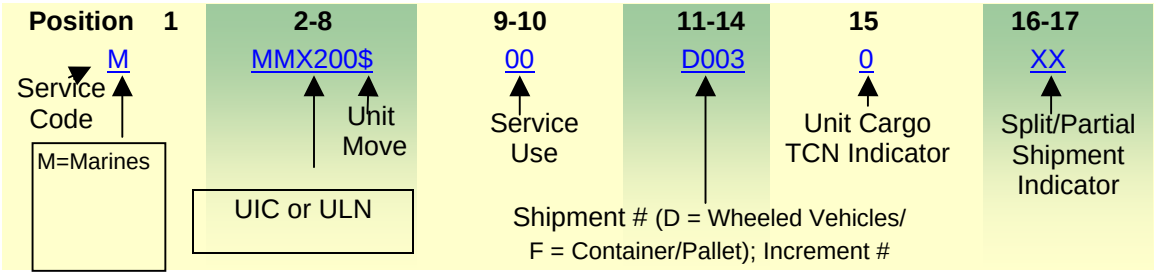
Transportation Control Number (TCN)

Data Elements that must be correctly entered:

1. Fill in a non unit move TCN number as follows:



2. Fill in a unit move TCN number as follows or follow the Shipping label information



3. Fill in the rest of the header information:

- POE – Port of Embarkation – ensure accurate 3 digit code from DTR

- POD – Port of Debarkation – ensure accurate 3 digit code from DTR
- Consignor/Consignee – shipper and receiver of equipment – must be accurate DODAAC from DODAAF
- Carrier Code: Should be sea or air
- Service: (M)arines
- Commodity Class: Class of supply that is in the container or vehicle type. i.e. IX or VII
- Operation code: Operation the tagged item will be supporting such as: "OIF" for Operation Iraq Freedom or "OEF" for Operation Enduring Freedom, etc.
- Free Text: It is recommended that you should enter the UIC, operation/exercise, POC, phone number, the container number, vehicle bumper number or the pallet ID number. (Note: This field is the most queried field on the ITV server so it's important to put information that will be useful to you and the people in theater.)

ITV SERVER

ITV RELATED WEBSITES
Visibility of asset movement will be achieved through many sources including several different Regional ITV Servers located around the world. The different RFID tag ITV servers can be located at: CONUS: https://160.147.8.10/Register; USFK: https://147.242.140.23; USAREUR: https://144.170.190.8. These sites will allow you to register to receive a user name and password to log on to the regional ITV servers that provide you ITV information on your in-transit shipments. At this site you fill out a form and submit it and within 24 hours you should receive and e-mail telling you what phone number to call to receive your password. You will need to call the number and obtain your password to log onto the regional ITV servers.

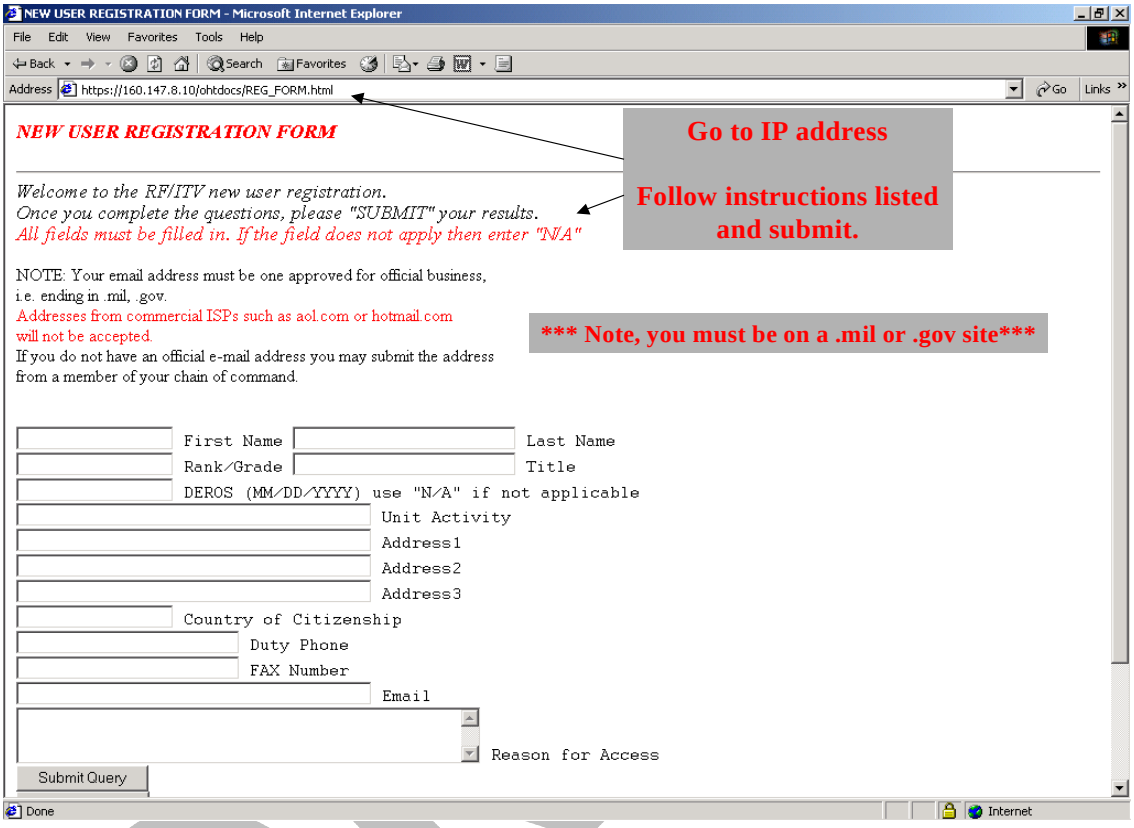
Access to the Joint Total Asset Visibility (JTAV) can be found at https://192.31.17.151; access to the Global Transportation Network (GTN) can be found at: http://www.gtn.transcom.mil. Personnel requiring accounts will find applications on the above websites that can be completed on-line.

Regional ITV Servers: These sites allow you to log on to a server and conduct queries to learn the status of your in-transit shipments. It also allows you create reports. The websites are: CONUS Server https://160.147.8.10/, USAREUR server https:// 144.170.190.8, and USFK Server https://147.242.140.23/ .

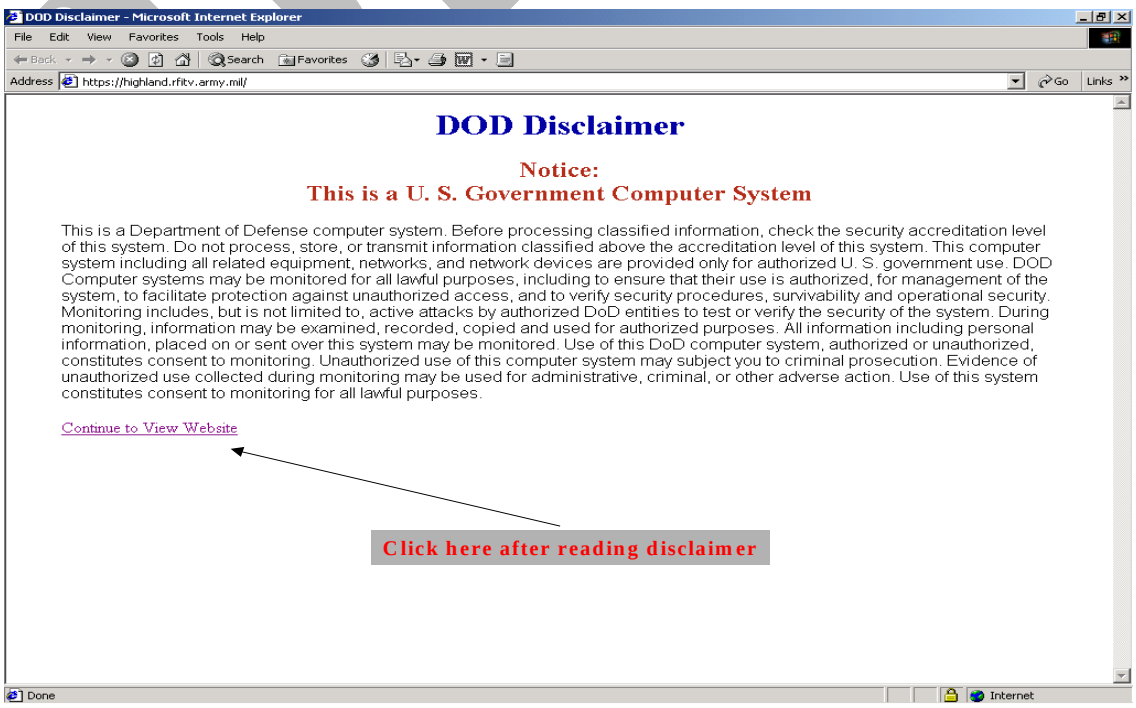
If you are a new user, you go to the website address of https://160.147.8.10/Register/ to display the ITV server registration form. Fill out the form and press Submit Query.

Within five days you should receive an e-mail from the server administrator advising you that you have been approved and giving you a phone number to call to receive your password and user name. Call the phone number on the e-mail and get your user name and password.

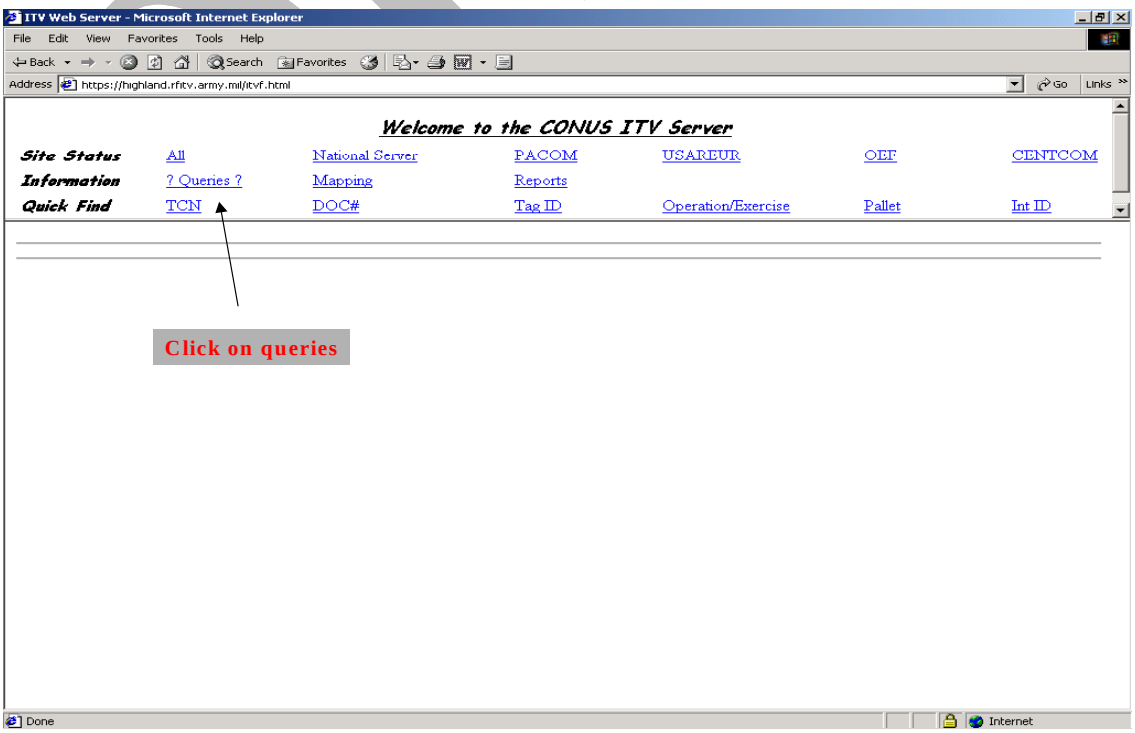
ITV SERVER REGISTRATION FOR A NEW USER

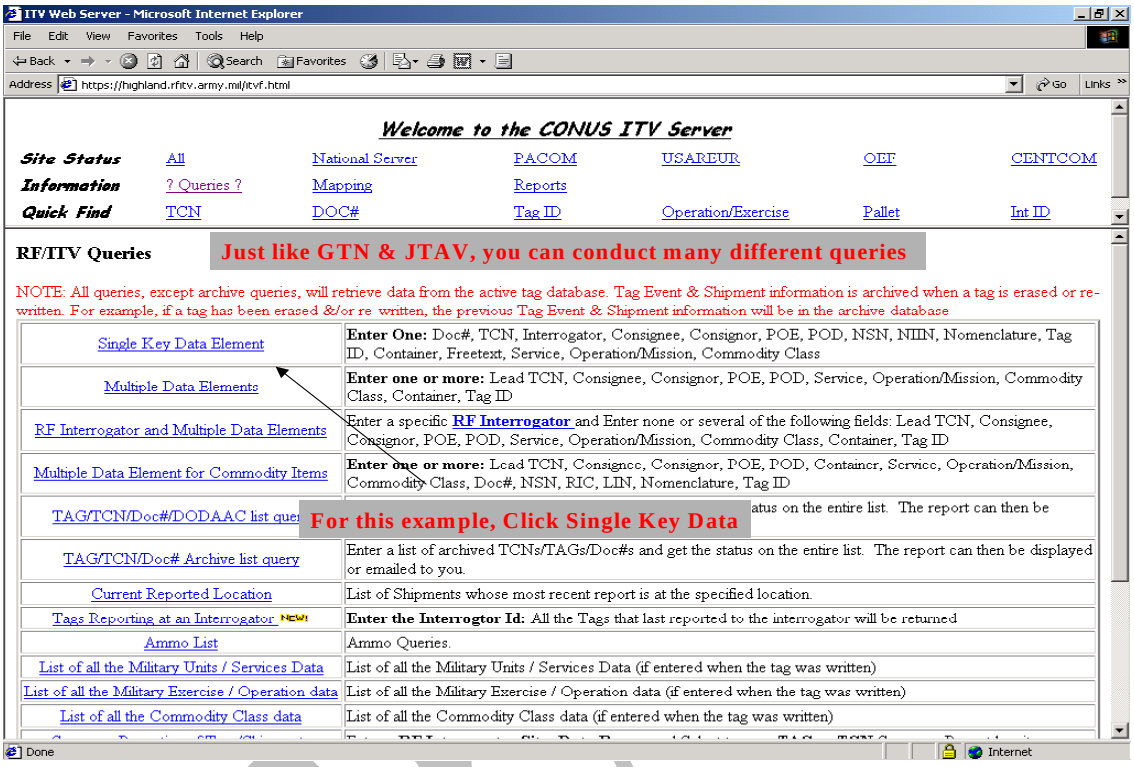


Once you have your account information (logon/password), you can access the ITV server by:



From the above screen, you can also go to one of the other ITV servers using your same logon/password. There is a wealth of information under "Information". Click the left icon (RF-ITV) as noted above to take you to the following screen. If you want mapping of sites, click the right icon above. For this example, we'll click on the left icon and go to queries.

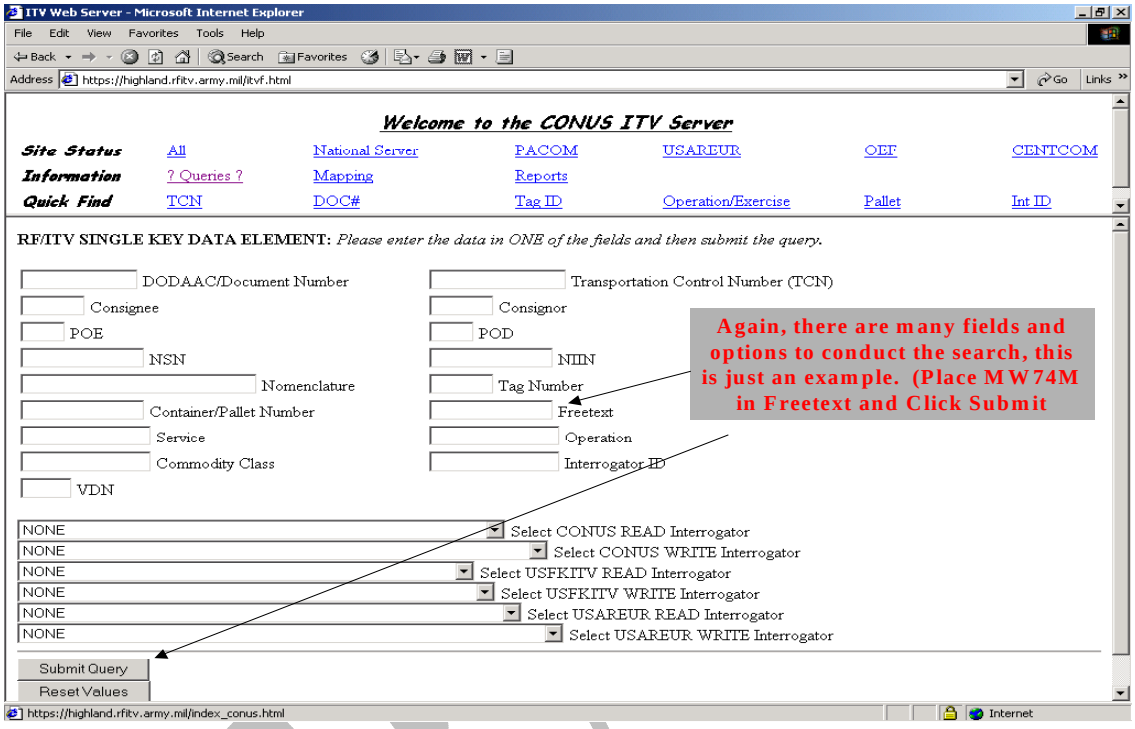




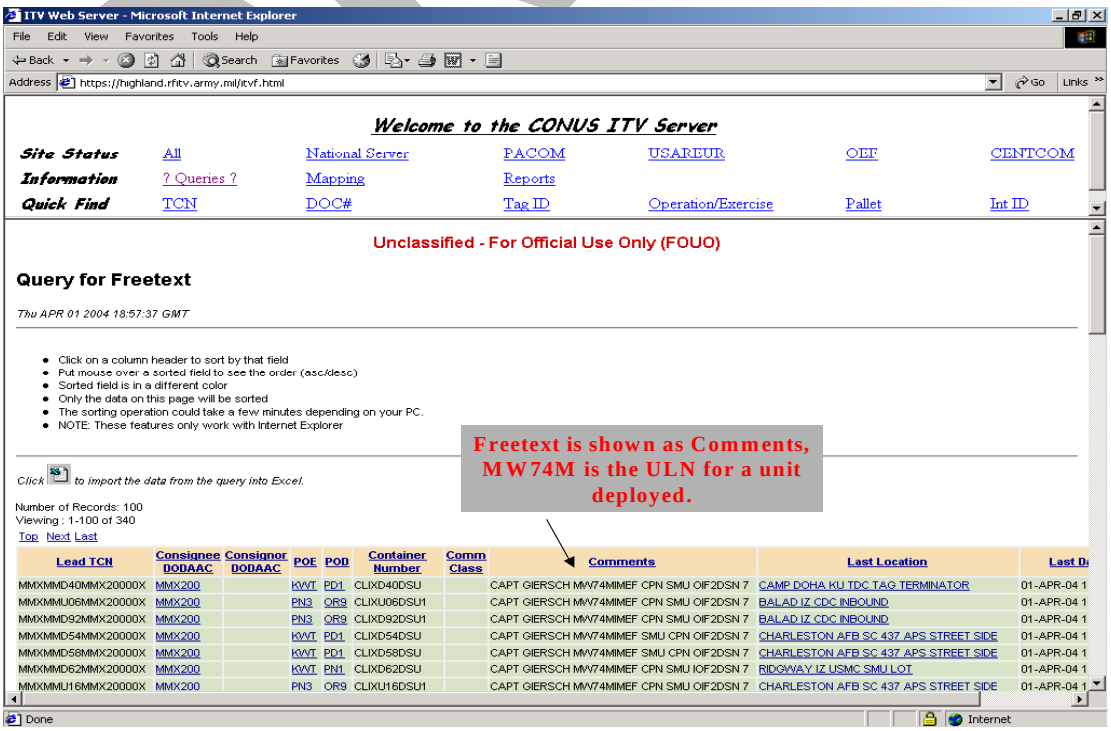
There are many different queries as you can see. Some of the ITV Server Queries and Report include:

- Single Key Data Element
- Multiple Data Elements
- RF Interrogator
- RF Interrogator and Multiple Data Elements
- Multiple Data Element for Commodity Items
- TAG/TCN/Document No/DODAAC
- TAG/TCN/Document No/Archive list
- Current reported location
- Tags Reporting at an Interrogator
- Ammo Data Elements
- Port Name
- Port Identifiers
- DODAAC
- Country
- Weekly Write/Read Report for all RF Sites
- Weekly Write/Read Reports for USFK,
- CONUS, USAREUR, and OEF
- List of all the Commodity Class Data
- Summary Reporting of Tags/Shipments
- Military Exercise/Operation
- Military Units/Service Data
- Interrogator Sites
- ITV Transportation – Network History Reports
- Tag Close/Tag Ship Time
- DODAACs Associated to Sites for TAG Close
- Tag Closeout Statistics
- Average Shipment Time
- Tag Totals by Month
- Tag Write Totals by Month
- Today's Tag Counts
- Today's Tag Report
- Yesterday's Tag Count
- Yesterday's Tag Report
- Weekly Tag Count

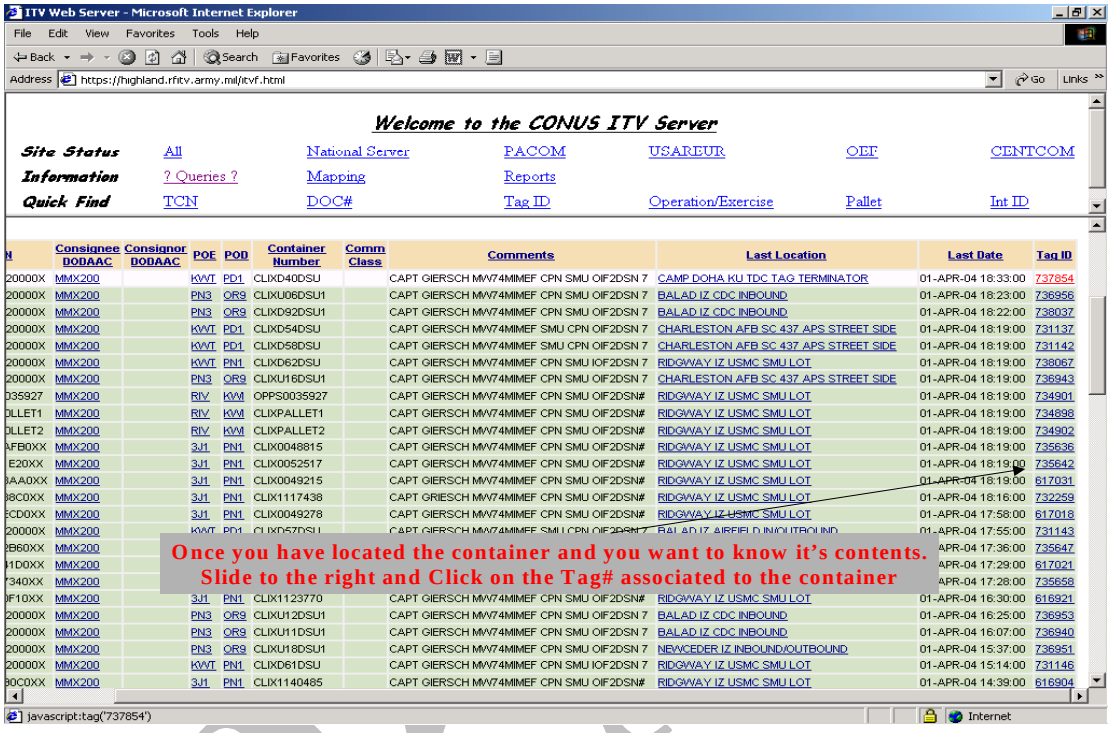
For this example, we'll click on Single Key Data Element meaning you only have to know one (1) data element to conduct the search.



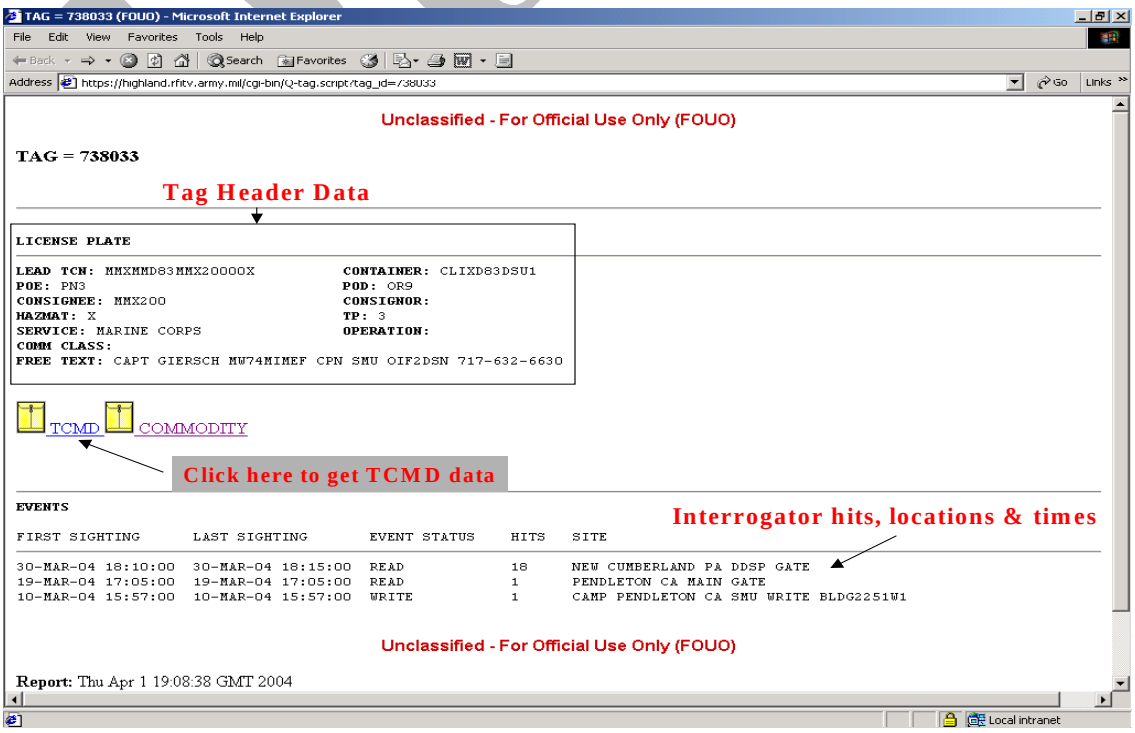
We've entered MW47M in the free text block above (which corresponds to what was written to the free text area of the RFID tag and clicked enter, because that's all the information we know.



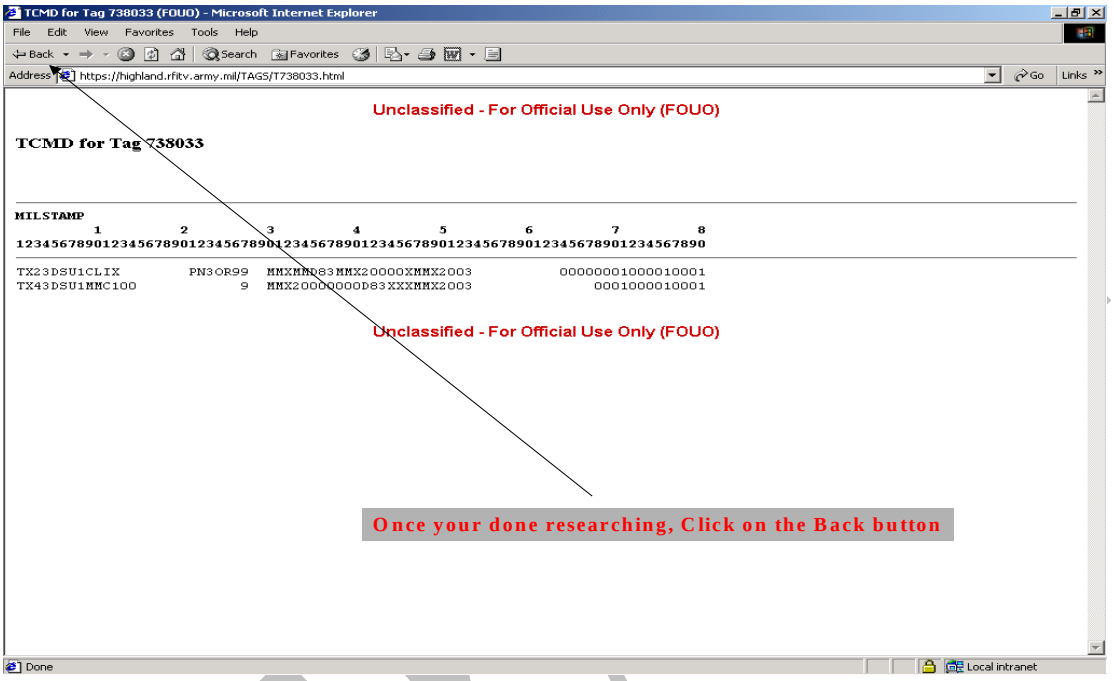
The system displayed all the free text comments identifying MW74M. We now must scroll down to find the specific record we are interested in finding.

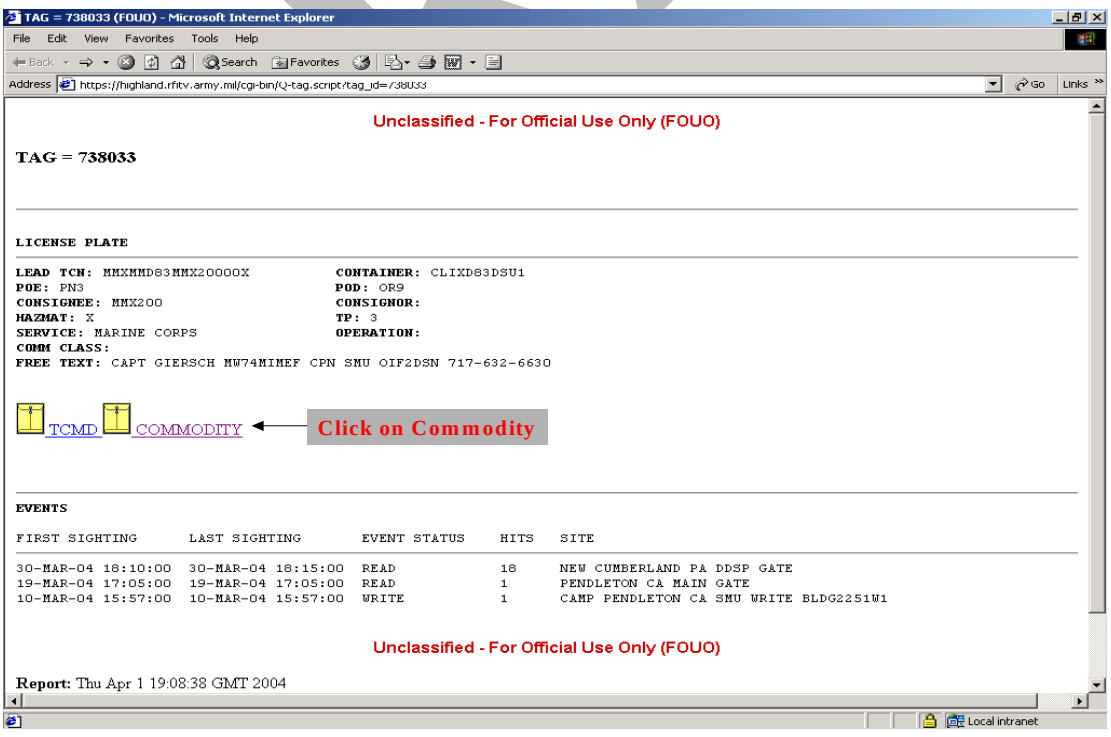


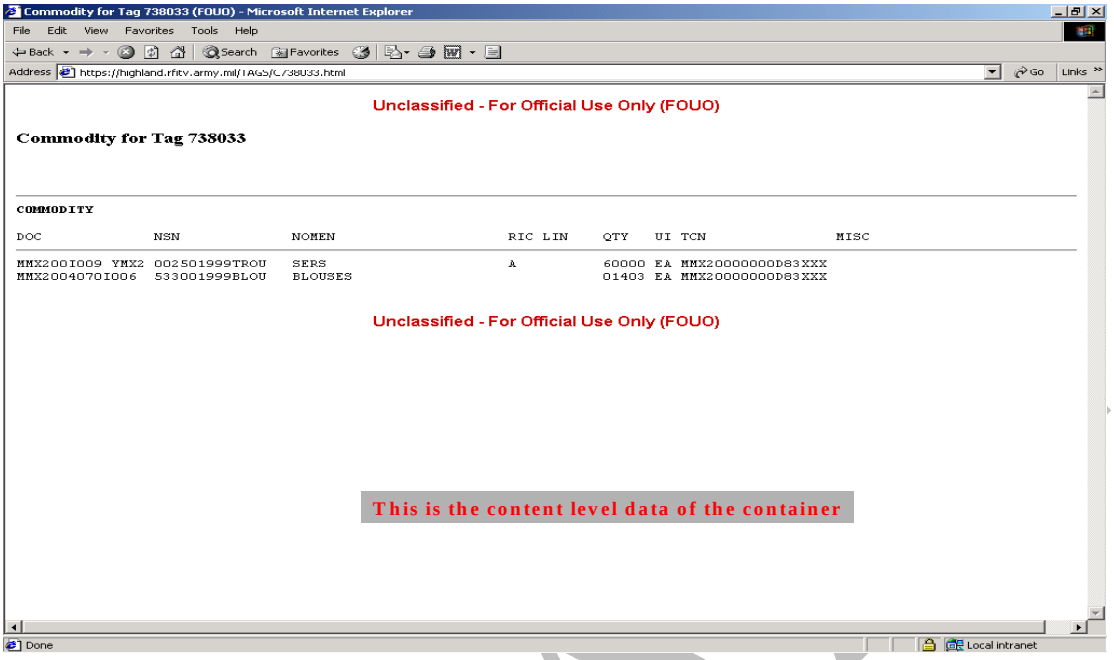
Once we find the record, click on the RFID tag number to display RFID information separated into four areas – License Plate (Tag Header Data), Commodity, TCMD, and Events (Location History). Easily read on this screen is the License Plate data and the Location History. The



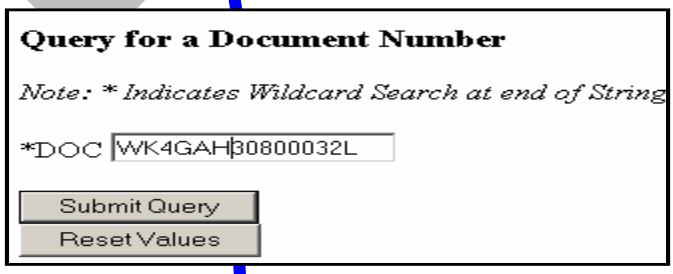
following screen shots will help guide you through the process for TCMD and Commodity determination.







Once you finish here, hit the back button to take you back to the main tag screen. If you are trying to find a specific document number in the ITV server, after you log in, click on the RF icon, on the next page, click on Queries, select the first query for single key data element, enter the document number, click on submit query, and the server will display all known information for Document Number WK4GAH3080032L.



Document Number	TCN	NSN	Nomenclature	Quantity	Unit Of Issue	Misc	Tag ID
WK4GAH30800032L	SW312332440022XXX	2530002044800	CYLINDER A	00001	EA		602557